

## **Declaration for the Explanation of Significant Differences**

### Site Name and Location

Sylvester/Gilson Road Superfund Site, Nashua, New Hampshire.

### Statement of Purpose

This decision document sets forth the basis of the determination to issue the attached Explanation of Significant Differences (ESD) for the Sylvester/Gilson Road Superfund Site in Nashua, New Hampshire (the Site).

### Statutory Basis for Issuance of the ESD

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), if the U.S. Environmental Protection Agency (EPA) determines that the remedial action being undertaken at a site differs significantly from the Record of Decision (ROD) for that site, EPA shall publish an explanation of significant differences (ESD) between the remedial action being undertaken and the remedial action set forth in the ROD and the reasons such changes are being made. Section 300.435(c) of the National Contingency Plan (NCP), and EPA guidance (OSWER Directive 9200.1-23.P, July 1999), indicate that an ESD, rather than a ROD amendment, is appropriate where the adjustments being made to the ROD are significant but do not fundamentally alter the overall remedy with respect to scope, performance or cost. Because the adjustments to the remedial action provided in this ESD are significant but do not fundamentally alter the overall remedy for the Site with respect to scope, performance, or cost, this ESD is properly being issued.

In accordance with Section 117 (d) of CERCLA, this ESD will be available for public review at both the EPA Region I Record Center in Boston, Massachusetts and the New Hampshire Department of Environmental Services (NHDES), Waste Management Bureau, Concord, New Hampshire.

### Overview of the ESD

To address ground water contamination at this Site, the following activities have been performed as part of the remedial action: extension of the municipal water supply to the area surrounding the Site; construction of a slurry wall around a twenty-acre area of the Site to contain the most contaminated portion of the ground water plume; installation of a surface cap within the area surrounded by the slurry wall; and extraction and treatment of contaminated ground water from 1986 until 1996. At this time, ground water monitoring is being performed and institutional controls prohibit use of the ground water.

The 1982 ROD and 1983 Supplemental ROD (SROD) for this Site do not require the restoration of the ground water to drinking water quality. Instead, the 1983 SROD established alternative cleanup limits (ACLs) for 16 compounds to address the threat of groundwater contaminant migration to Lyle Reed Brook, the primary focus of this remedial action.

In 1995, ground water sampling results, analyzed using EPA's ground water statistical tests, revealed that the site-specific ACLs had been attained throughout the Site, except for the ACLs for 1,1-dichloroethane (DCA) and 1,1,2-trichloroethane (TCA). The 1996 risk assessment revealed no current or future significant risk to human health posed by Site contaminants, assuming that the groundwater was not used for drinking water. The 1996 ecological risk assessment found that contaminants from the Site with ACLs established did not adversely impact the environment adjacent to Lyle Reed Brook. Based on the preceding evidence, in 1996, the ground water treatment system was shut down and placed in "ready" state.

Since 1995, EPA has planned to adjust the ACLs for DCA and TCA once ground water conditions at the Site stabilize following the expected rebound that occurs upon termination of ground water treatment. An analysis of the data through Fall of 2001 indicates that ground water conditions following termination of the ground water treatment system have stabilized.

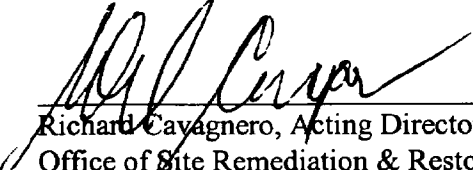
By this ESD, EPA is adjusting the ACLs, established by the 1983 SROD for DCA and TCA. The ACL for DCA established in the 1983 SROD was 1.5 parts per billion (ppb); the ACL for TCA established in the 1983 SROD was 1.7 ppb. These limits are quite low, and are below analytical detection limits using standard methodologies. At this time, the maximum concentration of DCA found at the Site is 34 ppb. While there are no detections of TCA at the Site at this time, the analytical detection limit for TCA is 2 ppb.

In order to establish a measurable, protective cleanup limit for DCA and TCA at this Site, EPA is adjusting these ACLs to levels that are identical to the most stringent cleanup levels currently established for these contaminants under federal and state law. Therefore, EPA is adjusting the ACL for DCA from 1.5 ppb to 81 ppb, which is identical to the New Hampshire Ambient Ground Water Quality Standard (NHAGQS) for DCA. There is no Safe Drinking Water Act Maximum Contaminant Level (MCL) or Maximum Contaminant Level Goal (MCLG) established for DCA. EPA is also adjusting the ACL for TCA from 1.7 ppb, to 3 ppb, which is the current Safe Drinking Water Act MCLG.

The levels of DCA and TCA at the Site attain the adjusted ACLs established by this ESD. All other ACLs established by the 1983 SROD are attained at this time. In addition, at this time, water quality in Lyle Reed Brook attains New Hampshire Surface Water Quality Criteria for each of the 16 ACLs established in the SROD.

#### Declaration

For the foregoing reasons and as explained herein, by my signature below, I approve the issuance of an Explanation of Significant Differences for the Sylvester/Gilson Road Superfund Site in Nashua, New Hampshire, and the changes stated therein.

  
Richard Cavagnero, Acting Director  
Office of Site Remediation & Restoration

9-23-02  
Date

# **EXPLANATION OF SIGNIFICANT DIFFERENCES SYLVESTER/GILSON ROAD SUPERFUND SITE NASHUA, NEW HAMPSHIRE**

## Introduction

This document constitutes an Explanation of Significant Differences (ESD) between the remedial actions specified in the Record of Decision (ROD) and Supplemental Record of Decision (SROD), July 29, 1982 and September 22, 1983, respectively, for the Sylvester/Gilson Road Superfund Site in Nashua, New Hampshire (the Site). This document also outlines the conditions that precipitated this ESD.

## Site Name and Location

Sylvester/Gilson Road Superfund Site, EPA ID# NHD099363541  
Hillsborough County, Nashua, New Hampshire.

## Lead and Support Agencies

The U.S. Environmental Protection Agency (EPA) is the lead Agency in preparing this document. The State of New Hampshire Department of Environmental Services (NHDES) is the support Agency in preparing this document.

## Site Description

The Site consists of twenty-eight acres and lies approximately ½ mile east of the Nashua River, a tributary of the Merrimack River; Four Hills Landfill lies to the northeast; and a trailer park and a high density residential area lie to the north. Lyle Reed Brook flows past the Site north-westward to the Nashua River. The Site is presently fenced and institutional controls, in the form of restrictions on ground water use through the State's Ground Water Management Zone, including recorded use restrictions, are in place. The majority of the ground water contamination is surrounded by a slurry wall and covered with a surface cap, both of which are maintained by the State. The former ground water treatment building at the Site is now used by the Town and State for storage.

## Citation of the Legal Authority that Requires the ESD

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), if the U.S. Environmental Protection Agency (EPA) determines that the remedial action being undertaken at a site differs significantly from the Record of Decision (ROD) for that site, EPA shall publish an explanation of significant differences (ESD) between the remedial action being undertaken and the remedial action set forth in the ROD and the reasons such changes are being made. Section 300.435(c) of the National Contingency Plan (NCP), and EPA guidance (OSWER Directive 9200.1-23.P, July 1999), indicate that an ESD, rather than a ROD amendment, is appropriate where the adjustments being made to the ROD are

significant but do not fundamentally alter the overall remedy with respect to scope, performance or cost. Because the adjustments to the 1982 ROD and 1983 Supplemental ROD (SROD) provided in this ESD are significant but do not fundamentally alter the overall remedy for the Site with respect to scope, performance, or cost, this ESD is properly being issued.

#### Summary of Significant Differences

EPA is issuing this ESD to change the site-specific ground water cleanup levels for 1,1-dichloroethane (DCA) and 1,1,2-trichloroethane (TCA).

The 1983 SROD for the Site established alternative cleanup levels (ACLs) for 16 compounds. The ACL for DCA established in the 1983 SROD was 1.5 parts per billion (ppb); the ACL for TCA established in the 1983 SROD was 1.7 ppb. These limits are quite low, and are below the detection limit of analytical equipment using standard methodologies. At this time, the maximum concentration of DCA found at the Site is 34 ppb. While there are no detections of TCA at the Site at this time, the analytical detection limit for TCA is 2 ppb.

In order to establish a measurable, protective cleanup limit for DCA and TCA at this Site, EPA is adjusting these two ACLs to levels that are identical to the most stringent cleanup levels currently established for these contaminants under federal and state law. Therefore, EPA is adjusting the ACL for DCA from 1.5 ppb to 81 ppb, which is identical to the New Hampshire Ambient Ground Water Quality Standard (NHAGQS) for DCA. There is no Safe Drinking Water Act Maximum Contaminant Level (MCL) or Maximum Contaminant Level Goal (MCLG) established for DCA. EPA is also adjusting the ACL for TCA from 1.7 ppb, to 3 ppb, which is identical to the Safe Drinking Water Act MCLG for TCA.

The levels of DCA and TCA at the Site attain the adjusted ACLs established by this ESD. All other ACLs established by the 1983 SROD are attained at this time. In addition, at this time, water quality in Lyle Reed Brook attains New Hampshire Surface Water Quality Criteria for each of the 16 ACLs established in the SROD.

#### Site History, Contamination and Selected Remedy

The former owner of the Site used a six-acre portion of the twenty-eight acre Site as a sand borrow pit for an undetermined number of years. During the late 1960's, the owner began to illegally use the Site for waste disposal. Household refuse, demolition materials, chemical sludges, and hazardous liquid chemicals were dumped at the Site at various times. Some hazardous liquids were also stored in steel drums which were either buried or placed on the ground surface.

Significant amounts of liquid hazardous wastes from the Site entered into the ground water. Documents from EPA's Bridgewater/Cannon's Engineering Superfund Site enforcement action (of which the Site was a part) show that for one ten-month period alone in 1979, the owner

disposed of more than 800,000 gallons of liquid hazardous wastes on-site. In June 1980, EPA and the State removed 1,314 drums containing primarily toluene, xylene, and benzene.

In 1981, initial investigations indicated the existence of high concentrations of inorganic compounds and volatile and extractable organic compounds in ground water under the Site. Modeling predicted that if the ground water plume were to continue migrating and discharge to Lyle Reed Brook and the Nashua River, ambient air quality standards for public health would be violated and that impacts to the stream life would be severe, if not fatal, to aquatic life. Based on this, EPA issued the ROD for the Site on July 29, 1982. The ROD addressed the immediate issues at the Site, such as installing a slurry wall around the worst of the contamination, capping the area within the slurry wall, and recovering contaminated ground water for re-circulation to the aquifer until a ground water remedy was designed. The ROD also documented EPA's extension of the municipal water supply to the area surrounding the Site.

EPA issued the SROD for the Site on September 22, 1983. The 1983 SROD specified the method of treatment for contaminated ground water and the cleanup goals. The 1982 ROD and the 1983 SROD do not require restoration of the ground water at the Site to drinking water quality. Instead, EPA established ACLs<sup>1</sup> to address the threat of migration of contaminated ground water from the Site to Lyle Reed Brook, which was the focus of this remedial action. The ACLs were based on the best-available-technology known at the time, which was roughly ninety-percent removal. The State and EPA began construction of the ground water treatment plant in April 1984 and finished in April 1986.

In 1983, the SROD estimated that ACLs would be attained within two-years of initiation of the treatment system. Following the two-years of operation of the treatment system, the SROD required an evaluation of the treatment system. The conclusion of that review was to increase the length of operation to 1994.

On July 10, 1990, based on monitoring at the Site, EPA issued an ESD for adjustments to the treatment plant and the means of recovering contaminated ground water. The ESD added more extraction wells, adjusted the infiltration of treated water, and directed the installation of a vacuum extraction system to recover excess toluene. The 1990 ESD directed that treatment would continue to remove contaminants to the greatest degree possible.

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<sup>1</sup> The ACLs that are the cleanup levels for this Site as provided in the 1983 Supplemental ROD should not be confused with the "alternate concentration levels" established in Section 121(d)(2)(B)(ii) of CERCLA as part of the Superfund Amendments and Reauthorization Act of 1986 (SARA). In the 1983 SROD, EPA selected ACLs for 16 compounds by requiring cleanup to levels that would result in a 90% reduction of the highest concentrations detected for each compound. In 1982, the highest concentrations of DCA and TCA were 15 and 17 ppb, respectively. Therefore, the cleanup levels established for DCA and TCA were 1.5 and 1.7 ppb, respectively.

By 1995, ground water sampling results revealed, using the EPA non-parametric statistical test which was finalized in 1996, that the ACLs had been attained throughout the Site, except for the compounds DCA and TCA. The 1996 risk assessment revealed no current or future significant risk to human health posed by Site contaminants, assuming that the ground water was not used for drinking water. The 1996 ecological risk assessment found that contaminants from the Site with ACLs established did not create an ecological risk in Lyle Reed Brook or violate New Hampshire Surface Water Quality Criteria. Based on the preceding evidence, in 1996, the ground water treatment system was shut down and placed in “ready” state.

During the operational lifetime, 1986 to January 1996, the ground water treatment plant treated over one billion gallons of water and removed and destroyed over 216 tons of ground water contaminants. Sampling since 1995 has shown no adverse impact to Lyle Reed Brook from the contaminants of concern at the Site that have established ACLs. Water quality in Lyle Reed Brook meets the goals established in the ROD.

Since 1995, EPA has planned to adjust the ACLs for DCA and TCA once ground water conditions at the Site stabilize following the expected rebound that occurs upon termination of ground water treatment. An EPA internal memorandum dated May 19, 1997, discusses the termination of the groundwater treatment system and planning for the sampling and other activities to be conducted as part of the verification of attainment phase of the cleanup (“Remedial Action Assessment Phase” or “RA Assessment Phase”). The RA Assessment Phase included a stabilization phase, to determine whether the aquifer is stable, followed by a verification phase. EPA had estimated that the stabilization phase would take from one to three years. The first full year of treatment system shut-down was 1996. The 1999 Five-Year Review concluded that the stabilization phase was continuing.

Based on a preliminary analysis of the 2001 sampling data, there is sufficient evidence to indicate that ground water contaminant concentrations have now stabilized. The data reveals that all of the contaminants with ACLs are at or below the concentration levels found at the time that the ground water treatment system was shut down. EPA believes that it is appropriate to adjust the ACLs for DCA and TCA at this time in order to facilitate the preparation of a full statistical analysis of the current data to verify the completion of the stabilization phase.

NHDES continues to be responsible for performing ground water sampling and monitoring Site conditions, preparing biennial reviews of the data, and overseeing implementation of the institutional controls. NHDES will now perform the statistical analysis to verify the end of the stabilization phase, and will continue to monitor the attainment of ACLs.

#### Basis for the Change

As explained above, the ACLs for DCA and TCA established in the 1983 SROD are below the detection limit. EPA is adjusting these ACLs to establish measurable, protective limits

for DCA and TCA.

#### Description of Significant Differences

EPA is issuing this ESD to change the cleanup level of two compounds. The 1983 SROD established cleanup levels for DCA and TCA based on the maximum concentration detected at the time of the 1983 SROD, 15 and 17 ppb, respectively, yielding a cleanup level of 1.5 and 1.7 ppb, respectively, determined by selecting a 90% reduction of initial concentrations. These limits are quite low, and are below the analytical detection limits using standard methodologies.

EPA is adjusting the ACL for DCA from 1.5 ppb to 81 ppb, which is identical to the New Hampshire Ambient Ground Water Quality Standard (NHAGQS) for DCA. There is no Safe Drinking Water Act Maximum Contaminant Level (MCL) or Maximum Contaminant Level Goal (MCLG) established for DCA. Also, there are no New Hampshire fresh water acute or chronic standards for DCA.

EPA is also adjusting the ACL for TCA from 1.7 ppb, to 3 ppb, which is identical to the Safe Drinking Water Act MCLG for TCA. New Hampshire has standards both for ambient ground water, 5 ppb, and freshwater chronic exposure to aquatic organisms, 9,400 ppb. To ensure protectiveness, EPA has selected the most stringent, non-zero criteria, 3 ppb.

The levels of DCA and TCA at the Site attain the adjusted ACLs established by this ESD. The changes to the remedial action documented in this ESD do not fundamentally alter the overall remedy for the Site with respect to scope, performance or cost.

#### Support Agency Comments

NHDES has participated with EPA in developing the changes to the selected remedy described herein and concurs with these changes and the approach adopted by EPA (see Appendix A).

#### Statutory Determinations

EPA believes that the remedy as adjusted herein remains protective of human health and the environment. The 1982 ROD and 1983 SROD do not require the restoration of the ground water to drinking water quality. All ACLs, including the adjusted ACLs established by this ESD, are currently attained. Lyle Reed Book, with respect to the contaminants with ACLs established, is in compliance with New Hampshire Surface Water Quality Criteria. Institutional controls that prohibit the use of the ground water are in place. Recent sampling results would not alter the conclusion of the 1996 risk assessment that there was no current or future significant risk to human health or the environment posed by Site contaminants, assuming that the ground water is not used as a drinking water source. In addition, there are no newly promulgated applicable or relevant and appropriate federal or state requirements that call into question the protectiveness of

the remedy at this Site.

### **Public Participation Compliance**

In accordance with Section 117(d) of CERCLA and §300.435(c)(2)(i) of the NCP, this ESD will become part of the Site's Administrative Record which is available for public review at the EPA Region I Record Center at One Congress Street, Boston, Massachusetts 02114 (617-918-1440), at the New Hampshire Department of Environmental Services at 6 Hazen Drive, Concord, New Hampshire 03301, and at the Nashua City Clerk's Office, 229 Main Street, Nashua, New Hampshire. Additionally, a notice that briefly summarizes the changes and the reasons for making such changes as described in this ESD, was published in a major local newspaper of general circulation.